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PYOPERICARDIUM MANIFESTING AS CARDIAC TAMPONADE - A RARE PRESENTATION OF A COMMON DISEASE

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Background: Pyopericardium is a rare pericardial disease, with a high mortality rate in which the infection propagates in the pericardial space. Eventually, the effusion can lead to tamponade, shock, and death. The pyopericardium usually manifests secondary to pneumonia, empyema, thoracic surgery, and hematogenous spread as a result of sepsis. The most common organisms attributed are Staphylococcus aureus, Klebsiella pneumoniae, Escherichia coli, and Mycobacterium tuberculosis. Even though India has the highest burden of Tuberculosis, its presentation as pericardial effusion is rare (1-8%), and manifesting as tamponade is extremely rare. Tuberculosis is a rare cause of pyopericardium. We report a case of this rare combination of the common disorder, Tuberculosis presenting as pyopericardium and cardiac tamponade.

Method and Results: A 20-year female with a six-month history of fever, weight loss, and cough presented to the cardiology department with chest pain and shortness of breath. On examination, the patient had tachycardia, tachypnea, and hypotension with muffled heart sounds. Lungs were clear. The echocardiography revealed large pericardial effusion in tamponade. Emergency pericardiocentesis was done under echocardiographic guidance. Approximately, 300 ml of thick pus was aspirate stabilizing the patient. Pus analysis revealed elevated Adenosine deaminase (ADA) (124U/L) and Lactate dehydrogenase (LDH) levels (3315U/L) with a neutrophilic predominance (80%). The culture was negative for any microbial growth. The erythrocyte sedimentation rate (ESR) was elevated (100mm/first hour) and the Mantoux test was positive with an induration of 16×18 mm. Gene Xpert® for tuberculous bacilli in the aspirate was positive. The computed tomography (CT) chest was suggestive of pulmonary tuberculosis. Magnetic resonance imaging (MRI) spine on evaluation of left hip pain revealed Pott's spine. After initiation of standard anti-tubercular treatment, she responded well with the resolution of the primary symptoms.

Conclusion: Timely judgment and diagnosis along with accurate microbiological diagnosis will determine the prognosis in pyopericardium. The case is being reported as Tuberculosis very rarely presents as pyopericardium in tamponade.

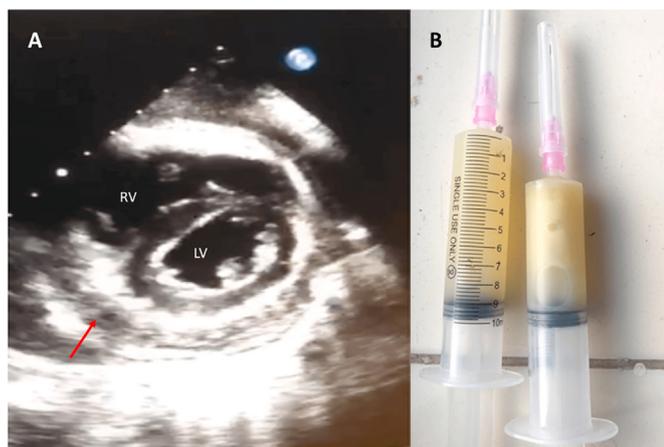


Figure 1. A. Echocardiographic parasternal short axis view showing large pericardial effusion (red arrow) and both ventricles, D shaped Left ventricle is also seen. B. The pus aspirated from the pericardial space. RV – right ventricle, LV – left ventricle

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THROMBO-EMBOLIC EVENTS WITHIN ONE MONTH OF COVID-19 VACCINATION

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Background: Thrombo-embolic events (TEE) after Coronavirus disease-19 (COVID-19) vaccination have been reported previously from other countries. Patients admitted with TEE to our hospital during the initial 3 months of vaccination drive in India were studied.

Method and Results: All patients who were admitted to our hospital between 1st March 2021 and 31st May 2021 (inclusive) with evidence of thrombosis in imaging study or coronary angiography were analysed. A detailed vaccination history including the type, dose and date of vaccine were obtained from the patients/attenders. The baseline characteristics of these patients were collected and detailed analysis were done to correlate the timing of vaccination and the current episode of TEE. Categorical variables are expressed as numbers and percentages and normally distributed continuous variables are expressed as mean ± SD, unless mentioned otherwise. Comparison between two groups was performed using Fisher's Exact test for categorical variables and the paired two-tailed 't' test for normally distributed variables. Of the 163 patients (Age 55±14 y, 34 f) admitted, 48 (29.5%) had vaccination history within 1 month of index event. The time interval between vaccination and TEE was <1, 1-2, and 2 weeks to 1 month in 17 (35%), 10 (21%), and 21 (44%) patients respectively. ChAdOx1 nCoV-19/AZD1222 was the most used vaccine- 35(73%), while 13(27%) had Covaxin. Baseline characteristics were similar in patients who were vaccinated within one month (Group 1) and others (Group 2, n=115). Thrombus location was similar in both groups [Coronary (60%vs52%, p=0.39), Cerebro-vascular (23%vs24% p=1), peripheral artery (4%vs5%, p=1), deep vein thrombosis (DVT)/pulmonary embolism (PE) (13%vs16%, p=0.81), central vein (0vs3%, p= 0.53- Group 1 vs Group 2 respectively)]. The In-hospital mortality rate was 4.2% and 3.5% (p= 1.0) respectively. There were higher rates of DVT/PE after Covaxin administration (4/13, 31%) compared to Covishield (2/35, 5%, p=0.04).

Conclusion: This single centre study showed that 29.5% of patients admitted in the first 3 months of vaccination with TEE had at least one dose of COVID-19 vaccine within one month prior to the index event. Both types of vaccine (Covishield and Covaxin) were associated with TEE. We need further studies to identify the incidence of this rare, but serious adverse events following COVID-19 vaccination.

TABLE. Baseline Characteristics of patients

Age in years	55±14	58±11	54±14	0.08
Male	129 (79)	37 (77)	92 (80)	0.68
Diabetes	102 (63)	31 (65)	71 (62)	0.86
Hypertension	81 (50)	26 (54)	55 (48)	0.50
Dyslipidemia	78 (48)	27 (56)	51 (44)	0.17
Smoker	5 (3)	1 (2)	4 (4)	1.0
Previous CAD/CVA	23 (14)	7 (15)	16 (14)	1.0
Previous COVID-19 infection	20 (12)	4 (8)	16 (14)	0.44
Renal impairment (e GFR<60ml/min/1.73m ²)	16 (10)	3 (6)	13 (11)	0.40
Platelet count (x 10 ³ /ml)	284±109	284±102	284±113	0.99
Thrombocytopenia (<150 x 10 ³ / ml)	13 (8)	2 (4)	11 (10)	0.35
Thrombus location				
Coronary	89 (55)	29 (60)	60 (52)	0.39
Cerebro-vascular	38 (23)	11 (23)	27 (24)	1.0
Peripheral artery	8 (5)	2 (4)	6 (5)	1.0
DVT/PE	24 (15)	6 (13)	18 (16)	0.81
Central Vein	3 (2)	0	3 (3)	0.56
Other venous	1 (1)	0	1 (1)	1.0